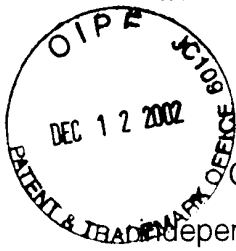


REMARKS



Claims 1-22 remain in the application. Claims 1, 4, 5, 6, 7, 9, 10, and 17 are in dependent form.

The above amendment added no new matter and is merely made to remove citations improperly included in the application that do not relate to the subject matter of the present invention.

It is respectfully submitted that the application is now in condition for allowance, which allowance is respectfully requested.

The Commissioner is authorized to charge any fee or credit any overpayment in connection with this communication to our Deposit Account No. 11-1449.

Respectfully submitted,

KOHN & ASSOCIATES, PLLC

A handwritten signature in dark ink, appearing to read "Amy E. Rinaldo", written over a horizontal line.

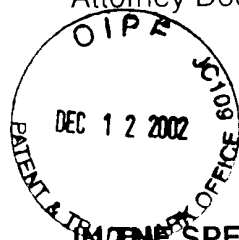
Amy E. Rinaldo
Registration No. 45,791
30500 Northwestern Highway
Suite 410
Farmington Hills, Michigan 48334
(248) 539-5050

Dated: 12/9/02.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on 12/9, 2002.

A handwritten signature in dark ink, appearing to read "Angel Webb", written over a horizontal line.
Angel Webb



VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Pages 26-34:

REFERENCES

[Burke and Olson, "Preparation of Clone Libraries in Yeast Artificial-Chromosome Vectors," Methods in Enzymology, Vol. 194, "Guide to Yeast Genetics and Molecular Biology," eds. C. Guthrie and G. Fink, Academic Press, Inc., Chap. 17, 251-270 (1991).]

[Capecchi, "Altering the genome by homologous recombination," Science, 244, 1288-1292 (1989).]

[Davies et al., "Targeted alterations in yeast artificial chromosomes for inter-species gene transfer," Nucleic Acids Research, Vol. 20, No. 11, 2693-2698 (1992).]

[Dickinson et al., "High frequency gene targeting using insertional vectors," Human Molecular Genetics, Vol. 2, No. 8, 1299-1302 (1993).]

[Duff and Lincoln, "Insertion of a pathogenic mutation into a yeast artificial chromosome containing the human APP gene and expression in ES cells," Research Advances in Alzheimer's Disease and Related Disorders, 1995.]

[Huxley et al., "The human HPRT gene on a yeast artificial chromosome is functional when transferred to mouse cells by cell fusion," Genomics, 9:742-750 (1991).]

[Jakobovits et al., "Germ-line transmission and expression of a human-derived yeast artificial chromosome," Nature, Vol. 362, 255-261 (1993).]

[Lamb et al., "Introduction and expression of the 400 kilobase precursor amyloid protein gene in transgenic mice," Nature Genetics, Vol. 5, 22-29 (1993).]

[Pearson and Choi, *Expression of the human b-amyloid precursor protein gene from a yeast artificial chromosome in transgenic mice*, Proc. Natl. Acad. Sci. USA, **90**:10578-82.

[Rothstein, "Targeting, disruption, replacement, and allele rescue: integrative DNA transformation in yeast" in Methods in Enzymology, Vol. 194, "Guide to Yeast Genetics and Molecular Biology," eds. C. Guthrie and G. Fink, Academic Press, Inc., Chap. 19, pp. 281-301 (1991).]

[Schedl et al., "A yeast artificial chromosome covering the tyrosinase gene confers copy number-dependent expression in transgenic mice," Nature, Vol. 362, 258-261 (1993).]

[Strauss et al., "Germ line transmission of a yeast artificial chromosome spanning the murine α_1 (I) collagen locus," Science, Vol. 259, 1904-1907 (1993).]

[Gilboa, E, Eglitis, MA, Kantoff, PW, Anderson, WF: Transfer and expression of cloned genes using retroviral vectors. BioTechniques 4(6):504-512, 1986.]

[Cregg, JM, Vedvick TS, Raschke WC: Recent Advances in the Expression of Foreign Genes in *Pichia pastoris*, BioTechnology 11:905-910, 1993.]

[Culver, 1998. Site-Directed recombination for repair of mutations in the human ADA gene. (Abstract) Antisense DNA & RNA based therapeutics, February, 1998, Coronado, CA.]

[Huston et al, 1991 "Protein engineering of single-chain Fv analogs and fusion proteins" in Methods in Enzymology (JJ Langone, ed.; Academic Press, New York, NY) 203; 46-88.]

[Johnson and Bird, 1991 "Construction of single-chain Fvb derivatives of monoclonal antibodies and their production in *Escherichia coli* in Methods in Enzymology (JJ Langone, ed.; Academic Press, New York, NY) 203:88-99.]

[Mernaugh and Mernaugh, 1995 "An overview of phage-displayed recombinant antibodies" in Molecular Methods In Plant Pathology (RP Singh and US Singh, eds.; CRC Press Inc., Boca Raton, FL) pp. 359-365.]

Newkome, G.R.; Moorefield, C.N.; Vogtle, F. [Dendritic Molecules] Dendrimers and Dendrons: Concepts, Synthesis, [Perspective] Applications, VCH: Weinheim, Germany [(1996)] 2001.

Hult, A.; Johansson, M.; Malmstrom, E. "Hyperbranched Polymers" In *Advances in Polymer Science: Branched Polymers*; Springer-Verlag: Berlin, Heidelberg, New York, 1999; Chapter 1, pp. 2-34.

Roovers, J.; Comanita, B. "Dendrimers and Dendrimer-Polymer Hybrids". In *Advanced in Polymer Science: Branched Polymers*; Springer-Verlag: Berlin, Heidelberg, New York, 1999, pp. 180-228.

Young, J.K.; Baker, G.R.; Newkome, G.R.; Morris, K.F.; Johnson, C.S., Jr. "Smart" Cascade Polymers. Modular Syntheses of Four-Directional Dendritic Macromolecules with Acidic, Neutral, or Basic Terminal Groups and the Effect of pH Changes on Their Hydrodynamic Radii." *Macromolecules* 1994, 27(13), 3464-3471.

Newkome, G.R.; Weis, C.D.; Moorefield, C.N.; Baker, G.R.; Childs, B.J.; Epperson, J. "Isocyanata-Based Dendritic Building Blocks: Combinatorial Tier Construction and Macromolecular Property Modification.: *Angew. Chem., Int. Ed. Engl.* 1998, 37, 307-310.

Lipkowski, J.; Ross, P.N. *Electrochemistry of Novel Materials*; VCH: New York, NY, 1994; p. Chapters 2 and 3.

Owen, J.R. "Rechargeable lithium batteries," *Chem. Soc. Rev.* 1997, 26, 259-267.

Newkome, G.R.; He, E. "Nanometric dendritic macromolecules: stepwise assembly by double (2,2':6',2"-terpyridine)ruthenium(II) connectivity." *J. Mater. Chem.* 1997, 7(7), 1237-1244.

Newkome, G.R.; He, E.; Godinez, L.A.; Baker, G.R. "Electroactive Metallomacromolecules via Tetrakis(2,2':6'm2"-Terpyridine)ruthenium(II) Complexes: Dendritic Networks towards Constitutional Isomers and Neutral Species without External Counterions." [*Chem. Commun.* 1998, 27-28] *J. AM. Chem. Soc.* 2000, 112, 9993-10006.

Newkome, G.R.; Lin, X.; Young, J.K. "Synthesis of Amine Building Blocks for Dendritic Macromolecule Construction." *Synlett* 1992, (1), 53-54.

Newkome, G.R.; He, E.; Godinez, L.A.; Baker, G.R. "Neutral highly branches metallomacromolecules: Incorporation of (2,2':6',2"-terpyridine)ruthenium(II) complex without external counterions." *Chem. Commun.* 1999, 27-28.

Narayanan, V.V.; Newkome, G.R.; Echegoyen, L.; Perez-Cordero, E. "Novel Dendrimers Possessing Internal Electroactive Quinoid Moieties." Polym. Prep. 1996, 37(2), 419-420.

Newkome, G.R.; Narayanan, V.V.; Godinez, L.A. "Anthraquinoid-based Extended Dendritic Monomers: Electrochemical Comparisons." Designed Monomers and Polymers [1999], 2000, 3, 1, 17-24.

Newkome, G.R.; Narayanan, V.V.; Godinez, L.A.; Perez-Cordero, E.; Echegoyen, L. "A Tailored Approach to the Synthesis of Electroactive Dendrimers Based on Diaminoanthraquinones." Macromolecules, 1999 [in press] 32, 6782-6791.

Newkome, G.R.; Narayanan, V.V.; Echegoyen, L.; Perez-Cordero, E.; Luftmann, H. "Synthesis and Chemistry of Novel Dendritic Macromolecules Possessing Internal Electroactive Anthraquinonoid Moieties." Macromolecules 1997, 30(17), 5187-5191.

Newkome, G.R. and Moorefield, C.N. "Unimolecular Micelles and Method of Making the Same." U.S. Patent 5,154,853, 1992.

Newkome, G.R. and Moorefield, C.N.; Baker, G.R.; Saunders, M.J.; Grossman, S.H. "Unimolecular micelles." Angew. Chem. Int. Ed. Engl. 1991, 30(9), 1178-1180.

Newkome, G.R.; Weis, C.D.; Moorefield, C.N.; Fronczek, F.R. "A useful dendritic building block: di-tert-butyl 4-[2-tert-butoxycarbonyl]ethyl]-4-isocyanato-1,7-heptanedicarboxylate." Tetrahedron Lett. 1997, 38(40), 7053-7056.

Newkome, G.R.; Weis, C.D.; Childs, B.J. "Synthesis of 1 \rightarrow 3 Branched Isocyanate Monomers for Dendritic Construction." Designed Monomers and Polymers 1997, 1(1) 3-14.

Newkome, G.R.; Childs, B.J.; Rourke, M.J.; Baker, G.R.; Moorefield, C.N. "Dendrimer Construction and Macromolecular Property Modification via Combinatorial Methods." [J. Combinatorial Chem. 1999, in press] Biotechnology and Bioengineering (Combinatorial Chemistry), 1999, 61(4), 243-253.

Newkome, G.R. and Moorefield, C.N. "Combination Method of Forming Cascade Polymer Surfaces." U.S. Patent 5,886,126, 1999.

Newkome, G.R. and Moorefield, C.N. "Combination Method of Forming Cascade Polymer Surfaces." U.S. Patent 5,886,127, 1999.

Salomon, M. "Solubility problems relating to lithium battery electrolytes." *Pure Appl. Chem.* 1998, 70(10), 1905-1912.

Newkome, G.R.; Moorefield, C.N.; Baker, G.R.; Johnson, A.L.; Behera, R.K. "Alkane Cascade Polymers Possessing Micellar Topology: Micellanoic Acid Derivatives." *Angew. Chem. Int. Ed. Engl.* 1991, 30(9), 1176-1178.

Buckman, A.F.; Morr, M. "Functionalization of Poly(ethylene glycol) and Monomethoxy-Poly(ethylene glycol)." *Makromol. Chem.* 1981, 182, 1379-1384.

Burns, C.J.; Field, L.D.; Hashimoto, K.; Petteys, B.J., Ridley, D.D.; Sandanayake, K.E.A.S. "A convenient synthetic route to differentially functionalized long chain polyethylene glycols." *Synth. Commun.* 1999, 29 (13), 2337-2347.

Cisak, A.; Werblan, L. *High-energy Non-aqueous Batteries*; Horwood: New York, 1993.

Newkome, G.R. and Weis, C.D. "Method of Utilizing Isocyanate Linkages for Forming Multi-Tier Cascade Polymers." U.S. patent 5,773,551, 1998.

Newkome, G.R.; Baker, G.R.; Behera, R.K.; Johnson, A.L.; Moorefield, C.N.; Weis, C.D.; Cao, W.J.; Young, J.K. "Cascade Molecules. 15. Synthesis of Tris(3-substituted) Tripropylnitromethanes." *Synthesis* 1991, (10), 839-841.

Zhang, J.; Moore, J.S.; Xu, Z.; Aguirre, R.A. "Nanoarchitectures. 1. Controlled synthesis of phenylacetylene sequences." *J. Am. Chem. Soc.* 1992, 114(6), 2273-2274.

Zhang, J.; Pesak, D.J.; Ludwick, J.L.; Moore, J.S. "Geometrically-controlled and site-specifically-functionalized phenylacetylene macrocycles." *J. Am. Chem. Soc.* 1994, 116(10), 4227-4239.

Newkome, G.R.; Gross, J.; Patri, A.K. "Synthesis of Unsymmetrical 5,5'-Disubstituted 2,2'-Bipyridines." *J. Org. Chem.* 1997, 62(9), 3013-3014.

Dominguez, X.A.; Lopez, I.C.; Franco, R. "Simple Preparation of a Very Active Raney Nickel Catalyst." *J. Org. Chem.* 1961, 26(5), 1625.

McMurry, J. "Ester Cleavages Via S_N2 -Type Dealkylation." In *Organic Reactions*; Wiley: New York, NY, 1976; Chapter 2, pp.187-224.

Weis, C.D.; Newkome, G.R. "Reduction of Nitro Substituted Tertiary Alkanes," *Synthesis* 1995 (9) 1053-1065.

Issberner, J.; Vogtle, F.; De Cola, L.; Balzani, V. "Dendritic Bipyridine Ligands and Their Tris(Bipyridine)ruthenium(II) Chelates-Syntheses, Absorption Spectra, and Photophysical Properties." *Chem. Eur. J.* 1997, 3(5), 706-712.

Tor, Y.; Libman, J.; Shanzer, A.; Lifson, S. "Biomimetic Ferric Ion Carriers. A Chiral Analogue of Enterobactin.: *J. Am. Chem. Soc.* 1987, 109(21), 6517-6518.

[Tor, Y.; Libman, J.; Shanzer, A.; Lifson, S. "Biomimetic Ferric Ion Carriers. A Chiral Analogue of Enterobactin.: *J. Am. Chem. Soc.* 1987, 109(21), 6517-6518.]

Tor, Y.; Libman, J.; Shanzer, A. "Biomimetic Ferric Ion Carriers. Chiral Ferrichrome Analogues.: *J. Am. Chem. Soc.* 1987, 109(21), 6518-6519.

Newkome, G.R.; Kiefer, G.E.; Xia, Y.-J.; Gupta, V.K. " α -Methyl Functionalization of Electron-Poor Heterocycles: Free Radical Chlorination." *Synthesis* 1984, 676-679.

Xu, Z.; Moore, J.S. "Stiff Dendritic Macromolecules: Extending Small Organic Chemistry to the Nanoscale Regime." *Polym. Prep.* 1993, 34, 128-129.

Xu, Z.; Moore, J.S. "Synthesis and Characterization of a High Molecular Weight Stiff Dendrimer." *Angew. Chem. Int. Ed. Engl.* 1993, 32(2), 246-248.

Xu, Z.; Kyan, B.; Moore, J.S. "Stiff Dendritic Macromolecules Based on Phenylacetylenes." In *Advances in Dendritic Macromolecules*; G.R. Newkome, ed., JAI: Greenwich, Conn., 1994; Chapter 2, pp. 69-104.

Markovitsi, D.; Tran-Thi, T.-H.; Briois, V.; Simon, J.; Ohta, K. "Laser Induced Triplet Excitons in the Columnar Phases of an Octasubstituted Metal Free Phthalocyanine." *J. Am. Chem. Soc.* 1988, 110(6), 2001-2002.

Kopelman, R.; Shortreed, M.; Shi, Z.-Y.; Tan, W.; Xu, Z.; Moore, J.S.; Bar-Haim, A.; Klafter, J. "Spectroscopic Evidence for Excitonic Localization in Fractal Antenna Supermolecules." *Phys. Rev. Lett.* 1998, 78(7), 1239-1242.

Shortreed, M.R.; Swallen, S.F.; Shi, Z.-Y.; Tan, W.; Xu, Z.; Devadoss, C.; Moore, J.S.; Kopelman, R. "Directed Energy Transfer Funnels in Dendrimeric Antenna Supermolecules." *J. of Phys. Chem. B* 1997, 101(31), 6318-6322.

Xu, Z.; Moore, J.S. "Design and synthesis of a convergent and directional molecular antenna." *Acta. Polym.* 1994, 45(2), 83-87.

Future Trends in Microelectronics. Reflections on the Road to Nanotechnology; Luryi, S., Xu, J., and Zaslavsky, A., Eds.; Kluwer Academic: Dordrecht, 1999; Volume 323.

Prospects in Nanotechnology. Toward Molecular Manufacturing; Krummenacker, M. and Lewis, J., Eds.; Wiley: New York, 1995.

Barnes, W.L.; Samuel, I.D. W. "Reflections on Polymers." *Science* 1999, 285(July 9), 211-212.

Fendler, J.H.; Fendler, E.J. *Catalysis in Micellar and Macromolecular Systems*; Academic Press: New York, 1975.

Fendler, J.H. "Membrane-Mimetic Approach to Advanced Materials." Springer-Verlag: Berlin, 1994; Chapter 113, p. 225.

Newkome, G.R.; Moorefield, C.N.; Keith, J.M.; Baker, G.R.; Escamilla, G.H. "Chemistry Within a Unimolecular Micelle Precursor: Boron Superclusters by Site- and Depth-Specific Transformations of Dendrimers." *Angew. Chem.* 1994, 106(6), 701-703.

Newkome, G.R.; Moorefield, C.N.; Keith, J.M.; Baker, G.R.; Escamilla, G.H. "Chemistry Within a Unimolecular Micelle Precursor: Boron Superclusters by Site- and Depth-Specific Transformations of Dendrimers." *Angew. Chem., Int. Ed. Engl.* 1994, 33(6), 666-668.

Newkome, G.R.; Narayanan, V.V.; Patri, A.; Groß, J.; Moorefield, C.N.; Baker, G.R. "Cascade Infrastructure Modification Via Integration of Application-Based Monomers." *Polym. Mater. Sci. Eng.* 1995, 73, 222-223.

Newkome, G.R.; Patri, A.K.; Godinez, L.A. "Design, Syntheses, Complexation and Electrochemistry of Polynuclear Metallodendrimers Possessing Internal Metal Binding Loci." *Chem. Eur. J.* 1999, 5(5), 1445-1451.

Newkome, G.R.; He, E.; Godinez, L.A. "Construction of Dendritic Assemblies: A Tailored Approach to Isomeric Metallomacromolecules by Means of Bis(2,2',6',2"-terpyridine)ruthenium(II) Connectivity." *Macromolecules* 1998, 31, 4382-4386.

Zhao, M.; Crooks, R.M. "Dendrimer-Encapsulated Pt Nanoparticles: Synthesis, Characterization, and Applications to Catalysis." *Adv. Mater. (Weinheim, Fed. Repub. Ger.)* 1999, 11(3), 217-220.

Chechik, V.; Zhao, M.; Crooks, R.M. "Self-Assembled Inverted Micelles Prepared from a Dendrimer Template: Phase Transfer of Encapsulated Guests." *J. Am. Chem. Soc.* 1999, 121, 4910-4911.

Zhao, M.; Crooks, R.M. "Homogeneous Hydrogenation Catalysis with Monodisperse, Dendrimer-Encapsulated Pd and Pt Nanoparticles." *Angew. Chem. Int. Ed.* 1999, 38(3), 364-366.

Balogh, L.; Tomalia, D.A. "Poly(Amidoamine) dendrimer-Templated Nanocomposites. 1. Synthesis of Zerovalent Copper Nanoclusters." *J. Am. Chem. Soc.* 1998, 120, 7355-7356.

Tan, N.C.B.; Balogh, L.; Trevino, S.F.; Tomalia, D.A.; Lin, J.S. "A small angle scattering study of dendrimer-copper sulfide nanocomposites." *Polymer* 1999, 40, 2537-2545.

Dagani, R. "Jewel-studded molecular trees." *Chem. & Eng. News* 1999, 77(6), 33-36.

Kriesel, J. W.; Tilley, T.D. "Dendrimers as Building Blocks for Nanostructured Materials: Micro- and Mesoporosity in Dendrimer-Based Xerogels." *Chem. Mater.* 1999, 11, 1190-1193.

Long, J.W.; Swider, K.E.; Merzbacher, C.I.; Rolison, D.R. "Voltammetric Characterization of Ruthenium Oxide-based Aerogels: the Nature of Capacitance in Nanostructured Materials." Technical Report #4, 7 Jul 1999; Office of Naval Research: Washington, DC, Grant N00014-99-WX-20324.

Tran Van, F.; Delabouglise, D. "Polyethyleneoxide-dihydrophenazine block copolymer as a cathode material for lithium-polymer batteries." *Electrochim. Acta* 1998, 43 (14-15), 2083-2087.

Steigerwald, M.L.; Brus, L.E. "Semiconductor Crystallites: A Class of Large Molecules." *Acc. Chem. Res.* 1990, 23(6), 183-188.

Noglik, H.; Pietro, W.J. "Surface Functionalization of Cadmium Sulfide Quantum Confined Semiconductor Nanoclusters. 2. Formation of a "Quantum Dot" Condensation Polymer." *Chem. Mater.* 1995, 7(7), 1333-1336.

Que, W.-M.; Kirczenow, G. "Theory of collective excitations in a two-dimensional array of quantum dots." *Phys. Rev. B: Condens. Matter* 1988, 38(5), 3614-3615.

Que, W.-M.; Kirczenow, G. "Theory of collective excitations in a two-dimensional array of quantum dots." *Phys. Rev. Lett.* 1990, 64(25), 3100-3101.

Weller, H. "Colloidal Semiconductor Q-Particles: Chemistry in the Transition Region Between Solid State and Molecules." *Angew. Chem., Int. Ed. Engl.* 1993, 32, 41-53.